

# 3 Options for Uteach/STEM Education Program

**Certificate  
in STEM Education**  
*9 credit hours*

**Minor  
in STEM Education**  
*15 credit hours*

**STEM Teacher  
Licensure**  
*(within a degree in a STEM field)*

*Computer Science  
(21 credit hours)  
Math (24 credit hours)  
Biology, Chemistry, Physics  
(27 credit hours)*

# Certificate of STEM Education

## 9 credit hours\*

\*minimum 3 upper-level credit hours

One Required Course:  
STEM 2003 – The Art of STEM Communication  
(may count as Univ. Core Social Sciences Elective)

Choose 6  
credit hours  
of Electives  
from seven  
choices!

Elective: **ARSC 1201 + ARSC 1212**  
Intro to Teaching STEM &  
Field Experience in  
Teaching STEM Subjects

Elective: **STEM 2103**  
Knowing & Learning in  
Science and Mathematics

Elective: **CATE 4073**  
Teaching Programming

Elective: **STEM 4333**

History and Philosophy of Science for Science Teachers

Elective: **BIOL/CHEM/PHYS 3273**  
Inquiry & Modeling in Science Education

Elective: **Math 2903**  
Functions, Foundations, & Models

Elective: **EDST 4113\***  
Outdoor & Informal Education  
- these courses can be applied to STEM Ed minor or  
teacher licensure program EXCEPT for this\* course

# Minor in STEM Education

15 Credit Hours

9 credit hours of required Courses

Choose 6 Credit Hours of Electives:

STEM 2003 The Art of STEM Communication

*or*

ARSC 1201 Intro to Teaching STEM &

ARSC 1212 Field Exp. in Teaching STEM

*And...*

STEM 2103 Knowing & Learning

*And...*

STEM 3203 Classroom Interactions

- SEED 4303 Teaching Secondary Mathematics I
- SEED 4313 Teaching Secondary Mathematics II
- SEED 4003 Teaching Secondary Science
- STEM 4333 History and Philosophy of Science for Science Teachers
- CATE 4073 Teaching Programming
- CIED 4023 Teaching in Secondary Inclusive Settings
- BIOL/CHEM/PHYS 3273 Inquiry & Modeling in Science Ed
- MATH 2903 Functions, Foundations, & Models

*(9 of the 15 credit hours must be courses with these prefixes: SEED, STEM, CIED, CATE)*

# STEM Teacher Licensure Program for Math, Biology, Chemistry, Physics or Computer Science Licensure

## Education Courses

### Everybody takes:

- Either ARSC 1201/ARSC 1212 or STEM 2003 Art of STEM Comm.
- STEM 2103 Knowing & Learning
- STEM 3203 Classroom Interactions
- CIED 4023 Teaching in Inclusive Secondary Settings
- STEM 4506 Supervised Teaching Internship

### MATH Licensure only:

- SEED 4303 or SEED 4313 Teaching Secondary Mathematics I or II
- MATH 2903 Functions, Foundations, and Models

### Science Licensure Only:

- SEED 4003 Teaching Secondary Science
- STEM 4333 History and Philosophy of Science for Science Teachers
- BIOL/CHEM/PHYS 3273 Inquiry & Modeling in Science Education

### Computer Science Licensure Only:

- CATE 4073 Teaching Programming in Secondary Schools

## Content Area Courses

- Each licensure area has a list of specific content area courses that must be taken to earn the teaching license.
- You do not need to earn a degree in the licensure area (*although most people will take that path, the revised program allows other majors such as engineering or geosciences to add the required content courses along with the STEM Teacher Licensure courses to earn the teaching license*)
- Refer to the following slides for required content courses per licensure area

# Mathematics Licensure (grades 7-12) Content Requirements

**MATH 2574 Calculus III**

**MATH 2803 Transition to Advanced Mathematics**

**MATH 2903 Functions, Foundations, and Models**

*(also listed under Education requirements)*

**MATH 3093 Abstract Linear Algebra**

**MATH 3113 Introduction to Abstract Algebra**

**MATH 3133 History of Mathematics**

**MATH 3773 Foundations of Geometry**

**STAT 3003 Statistical Methods**

# Biology/Life Science Licensure (grades 7-12) Content Requirements

**BIOL 2323 General Genetics**

**BIOL 2533 Cell Biology**

**BIOL 3023 Evolutionary Biology**

**BIOL 3863 General Ecology**

**BIOL 3273 Inquiry & Modeling in Science Education**

*(also listed under Education requirements)*

**BIOL 2321 or BIOL 5531 or BIOL 3861 – Life Science Lab**

# Chemistry Licensure (grades 7-12) Content Requirements

**CHEM 1103/1L (or 1203/1L) Chemistry I**

**CHEM 1123/1L (or 1223/1L) Chemistry II**

**CHEM 3603/1L (or 3703/1L) Organic Chemistry I**

**CHEM 3613/1L (or 3713/1L) Organic Chemistry II**

**CHEM 3453/1L (or 3504) Physical Chemistry**

**CHEM 3273 Inquiry & Modeling in Science Education**

*(also listed under Education requirements)*

# Physics Licensure (grades 7-12) Content Requirements

**PHYS 2054 (or 2013/2011L) Physics I**

**PHYS 2074 (or 2033/2031L) Physics II**

**PHYS 3613 (or 3603/360VL) Modern Physics**

**PHYS 3273 Inquiry & Modeling in Science Education**

*(also listed under Education requirements)*



# Computer Science Licensure (grades 4-12) Content Requirements

**CSCSE 2004 Programming Foundations I**

**CSCSE 2014 Programming Foundations II**

**CSCSE 2114 Digital Design**

**CSCSE 3193 Programming Paradigms**

**Choose 2 electives from this list:**

- **CSCSE 2214 Computer Organization**
- **CSCSE 3513 Software Engineering**
- **CSCSE 3613 Operating Systems**

# Contact a UAteach/STEM Ed Advisor

Science Majors:

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Math, Computer Science, Engineering majors:

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